



UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/778,131	02/06/01	JOHNSON	M PHN 16,952A

MMC2/1024
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EXAMINER	
SCHECHTER, A	
ART UNIT	PAPER NUMBER
2871	
DATE MAILED: 10/24/01	

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/778,131

Applicant(s)

JOHNSON ET AL.

Examiner

Andrew Schechter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-5, 7 and 9-16 is/are rejected.
- 7) ☒ Claim(s) 6 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: the first page, evidently a Xerox of the previous declaration, cuts off the address of last inventor, Adrianus van der Put.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "LCD in which one of two electrodes of a pixel is coated with a material to equalize the electrode work functions to prevent flicker".

Claim Objections

3. Claim 16 is objected to because of the following informalities: "surface" in line 1 should presumably be "substrate". Appropriate correction is required.

Double Patenting

4. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re*

Ockert, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

5. Claims 16 and 9-13 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-6 respectively of prior U.S. Patent No. 6,236,440. This is a double patenting rejection.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. Claims 3, 4, 5, 7, 15, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by *Lu et al.*, U.S. Patent No. 5,764,324.

Lu discloses [col. 5, line 54 through col. 6, line 3, for instance] the exact same problem which concerns the present inventors - flicker caused by a mismatch in the work functions of the ITO and Al pixel electrodes in a reflective LCD - and also discloses the same solution - adding layers of transparent conductive or dielectric material between the ITO and Al electrodes.

Specifically, *Lu* discloses a display device with first and second substrates, first and second picture electrodes made of Al and ITO, liquid crystal as the intermediate opto-electronic material, all defining a pixel, means for supplying electric voltages (TFTs), with one picture electrode coated with at least a layer of conducting material to decrease the difference in the work functions of the Al and ITO. Claim 15 is therefore anticipated.

The second picture electrode is reflective (Al), there is a conducting layer (ITO) added as well as a dielectric (dipole comprising) layer [see Fig. 6], the difference in work functions is made "approximately equal" [hence within 0.25 eV, since they start out being only 0.29 apart, see col. 5, lines 55-56], and the ITO layer added has substantially the same work function as that of the first electrode since it is the same material. Claims 3, 4, 5, and 7 are therefore anticipated by *Lu*.

Lu also discloses [first embodiment] a display device having the substrates, pixel electrodes, liquid crystal, and TFTs as above, but with at least one layer of a material comprising a dipole, in this case a silicon oxide passivation layer [50]. (The Examiner believes that this will inherently have the effect of decreasing the difference in the work functions of the electrodes [just as described in the present application]; if the applicant believes it will not, the Examiner would appreciate the applicant clarifying what properties are required by the dielectric ("comprising a dipole") material in order to achieve this effect.) Claim 16 is therefore anticipated by *Lu*.

8. Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by *Bohmer et al.*, U.S. Patent No. 6,052,160.

Bohmer discloses [see Fig. 2] a display device having two substrates, a channel plate with channel electrodes [31, 32], liquid crystal, pixels, means for driving the pixels, and at least one channel electrode coated with at least one layer of material modifying the work function of the material of the channel electrode [col. 3, lines 15-35 and 60-64]. Claim 14 is therefore anticipated by *Bohmer*.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Lu* as applied to claim 16 above.

Claims 9-13 describe materials purportedly intended to effect the electrode work function difference; they unfortunately also describe materials in common use as alignment films: fluorine-containing polyimide/polyamide films on both substrates, UV-treated as needed. It would have been obvious to one of ordinary skill in the art to incorporate alignment films such as these into the device *Lu*, motivated by the desire to orient the liquid crystal molecules in various standard and conventional ways. Claims 9-13 are therefore unpatentable over *Lu*.

Allowable Subject Matter

11. Claims 6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, particularly *Lu*, does not disclose putting an Al layer on the ITO electrode, as per claim 6; nor putting a layer of the same conducting material on both the Al and ITO electrodes, as per claim 8. The Examiner understands the scope of claim 8 to exclude simply putting an ITO layer on the Al electrode and considering the ITO electrode to already have a layer of ITO on it - this is disclosed by *Lu*. It includes forming the ITO and Al electrodes, then putting an additional layer of ITO on both the ITO and the Al electrodes.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,325,219 to *Hanyu* discloses an LCD eliminating flickering and incorporating a fluorine-based polyimide film as an alignment film.

U.S. Patent No. 5,892,563 to *Ono* discloses recognition of the same problem (different work functions causing flicker) as the present invention (though it is described in slightly different language) and gives alternative solutions, forming the reflective electrode of a different material rather than merely putting another layer over it, or

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putting a dielectric mirror on the reflective electrode. The Examiner would be interested to know if the applicant believes this is different from the invention of claim 16; for instance, does this dielectric mirror satisfy the limitation that "the difference in the work functions of the first and second materials is decreased" in the opinion of the applicant? Does the applicant believe that a standard alignment layer made of polyimide satisfies this limitation?

Japanese Patent Document 10-054995 to *Ono* appears similar to U.S. Patent No. 5,892,563 to *Ono*.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (703) 306-5801. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 746-4711 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Andrew Schechter
October 10, 2001


TOANTON
PRIMARY EXAMINER